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Non Invasive Imaging

HIV INFECTION IS ASSOCIATED WITH INCREASED CORONARY NON-CALCIFIED PLAQUE AMONG PARTICIPANTS WITH CORONARY ARTERY CALCIUM SCORE OF ZERO: MULTICENTER AIDS COHORT STUDY (MACS)

Oral Contributions

Room 146 A

Sunday, March 30, 2014, 9:46 a.m.-9:57 a.m.

Session Title: Coronary Calcium and Computed Tomography: Breaking New Grounds

Abstract Category: 18. Non Invasive Imaging: CT/Multimodality, Angiography, and Non-CT Angiography

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Background: HIV infection is a risk factor for coronary artery disease (CAD), and HIV-infected (HIV+) patients have a higher burden of subclinical atherosclerosis and non-calcified coronary plaque (NCP), than HIV-uninfected (HIV-) persons. In the general population, a coronary artery calcium score (CAC) of zero is associated with a very low risk for clinical CAD events. Whether a CAC of zero is similarly associated with low levels of subclinical atherosclerosis in HIV+ patients is unknown. We investigated the association of HIV infection with the presence of NCP in MACS participants with no CAC.

Methods: HIV+ and HIV- men from the Multicenter AIDS Cohort Study, an on-going cohort of men with or at risk for HIV, underwent coronary CT angiography and non-contrast CT scans. We found that 225/450 HIV+ (50%) and 149/309 HIV- (48%) men had CAC=0. Poisson regression with robust variance was performed in men with no CAC to assess associations between the presence of non-calcified coronary plaque (NCP score> 0) and HIV serostatus. Models were adjusted for age, race, and CAD risk factors.

Results: Among men with no CAC, HIV+ men were slightly younger than HIV- men (50.2 v. 52.7 yrs, $p=0.001$), had higher triglycerides (153.9 v. 115.7 mg/dL, $p<0.001$), and were more likely to be current smokers ($p=0.02$). Among HIV+ men, 78% had mean plasma HIV RNA< 50 copies/ml; mean nadir CD4+ T-cell count was 251(IQR 141-331) cells/mm³. The prevalence of NCP was 55.6% in HIV+ and 48.3% in HIV- men. HIV+ serostatus was significantly associated with a higher prevalence of NCP (prevalence ratio= 1.31, 95% CI 1.07-1.6), after adjusting for traditional CAD risk factors. There were no associations between either nadir CD4 cell count or detectable HIV RNA levels and NCP presence.

Conclusions: Among persons without CAC, HIV infection was associated with a greater prevalence of NCP, independent of traditional CAD factors, indicating that screening for CAC may be insufficient among HIV+ persons. Further studies are needed to determine associations between NCP and future clinical CAD events among HIV-infected persons to determine appropriate preventive approaches.